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than the lower control limit (LCL_1), the basic model is in compliance and testing is at an end.

(ii) If the value of n is greater than n_1 , the basic model is in non-compliance. The size of a second sample n_2 is determined to be the smallest integer equal to or greater than the difference $n - n_1$. If the value of n_2 so calculated is greater than $20 - n_1$, set n_2 equal to $20 - n_1$.

Step 8. Compute the combined mean (\bar{X}_2) of the measured energy performance of the n_1 and n_2 units of the combined first and second samples as follows:

$$\bar{X}_2 = \frac{1}{n_1 + n_2} \sum_{i=1}^{n_1+n_2} X_i \quad (6)$$

Step 9. Compute the standard error ($SE(\bar{X}_2)$) of the mean full-load efficiency of the n_1 and n_2 units in the combined first and second samples as follows:

$$SE(\bar{X}_2) = \frac{S_1}{\sqrt{n_1 + n_2}} \quad (7)$$

(Note that S_1 is the value obtained above in Step 3.)

Step 10. Set the lower control limit (LCL_2) to,

$$LCL_2 = RE - tSE(\bar{X}_2) \quad (8)$$

where t has the value obtained in Step 5, and compare the combined sample mean (\bar{X}_2) to the lower control limit (LCL_2) to find one of the following:

(i) If the mean of the combined sample (\bar{X}_2) is less than the lower control limit (LCL_2), the basic model is in non-compliance and testing is at an end.

(ii) If the mean of the combined sample (\bar{X}_2) is equal to or greater than the lower control limit (LCL_2), the basic model is in compliance and testing is at an end.

MANUFACTURER-OPTION TESTING

If a determination of non-compliance is made in Steps 6, 7 or 10, above, the manufacturer may request that additional testing be conducted, in accordance with the following procedures.

Step A. The manufacturer requests that an additional number, n_3 , of units be tested, with n_3 chosen such that $n_1 + n_2 + n_3$ does not exceed 20.

Step B. Compute the mean full-load efficiency, standard error, and lower control limit of the new combined sample in accordance with the procedures prescribed in Steps 8, 9, and 10, above.

Step C. Compare the mean performance of the new combined sample to the lower con-

trol limit (LCL_2) to determine one of the following:

(a) If the new combined sample mean is equal to or greater than the lower control limit, the basic model is in compliance and testing is at an end.

(b) If the new combined sample mean is less than the lower control limit and the value of $n_1 + n_2 + n_3$ is less than 20, the manufacturer may request that additional units be tested. The total of all units tested may not exceed 20. Steps A, B, and C are then repeated.

(c) Otherwise, the basic model is determined to be in non-compliance.

Subpart Q—Amended Energy Conservation Standards for Certain Commercial Equipment, and Effective Dates

SOURCE: 66 FR 3354, Jan. 12, 2001, unless otherwise noted.

§ 431.701 Purpose and scope.

This subpart sets forth the minimum efficiency levels for commercial equipment, contained in ASHRAE/IES Standard 90.1-1999, that the Department of Energy has adopted as national standards, effective in 2003 or 2004 as specified in §§ 431.701 through 431.704. On their effective dates, these levels will amend and replace some of the efficiency levels required for certain commercial equipment by Section 342(a) of EPCA. The Department has not adopted the efficiency levels specified in ASHRAE/IES Standard 90.1-1999 for products not identified in this subpart, and the levels specified in Section 342(a) of EPCA for those products will remain in force unless and until they are amended. The Department adopted the efficiency levels in this subpart pursuant to Section 342(a)(6) of EPCA, which addresses the establishment of national standards at minimum levels specified in amendments to ASHRAE/IES Standard 90.1, in place of the efficiency levels required in Section 342(a) of EPCA.

§ 431.702 Commercial warm air furnaces.

Each commercial warm air furnace manufactured after October 29, 2003 must meet the following energy efficiency standard levels: